IN THE CLAIMS

1. (Currently amended) A lock mechanism for a downhole tool, comprising:

a stationary component and a final controlled element;

a movable component movable with respect to said stationary component and linked to said final controlled element to put said final controlled element in at least two positions;

a lock assembly triggered by a predetermined movement of said movable component that, when actuated, impedes movement of said ~~final controlled element~~ movable component, ~~from one of its said positions into another~~ despite application of a force or a pattern of forces directly or indirectly to said lock assembly, sufficient to move said final controlled element to the other of said positions.

2. (Original) The mechanism of claim 1, wherein:

said lock assembly is automatically triggered when said final controlled element reaches a predetermined position.

3. (Currently amended) ~~The mechanism of claim 1, wherein:~~

A lock mechanism for a downhole tool, comprising:

a stationary component and a final controlled element;

a movable component movable with respect to said stationary component and linked to said final controlled element to put said final controlled element in at least two positions;

a lock assembly triggered by a predetermined movement of said movable component that, when actuated, impedes movement of said final controlled element from one of its said positions into another despite application of a force or a pattern of forces to said lock assembly;

said final controlled element is selectively movable ~~with~~ after said lock assembly has been engaged by virtue of relative movement between portions of said movable component with respect to each other.

4. (Currently amended) ~~The mechanism of claim 2, wherein:~~

A lock mechanism for a downhole tool, comprising:

a stationary component and a final controlled element;

a movable component movable with respect to said stationary component and linked to said final controlled element to put said final controlled element in at least two positions;

a lock assembly triggered by a predetermined movement of said movable component that, when actuated, impedes movement of said final controlled element from one of its said positions into another despite application of a force or a pattern of forces to said lock assembly;

said lock assembly is automatically triggered when said final controlled element reaches a predetermined position;

said final controlled element is selectively movable ~~with~~ after said lock assembly has been engaged by virtue of relative movement between portions of said movable component with respect to each other.

5. (Original) The mechanism of claim **1**, wherein:

said lock assembly comprises a pair of shoulders that can pass by each other until said predetermined movement is reached whereupon a locking member extends at least one of said shoulders to selectively prevent them from passing each other.

6. (Original) The mechanism of claim **5**, wherein:

said locking member moves relatively to said shoulder that it extends.

7. (Original) The mechanism of claim **6**, wherein:

said locking member comprises at least one collet mounted to said movable member.

8. (Previously amended) A lock mechanism for a downhole tool, comprising:

a stationary component and a final controlled element;

a movable component movable with respect to said stationary component and linked to said final controlled element to put said final controlled element in at least two positions;

a lock assembly triggered by a predetermined movement of said movable component that acts to impede movement of said movable component with respect to said stationary component;

said lock assembly comprises a pair of shoulders that can pass by each other until said predetermined movement is reached whereupon a locking member extends at least one of said shoulders to selectively prevent them from passing each other;

said locking member moves relatively to said shoulder that it extends;

said locking member comprises at least one collet mounted to said movable member;

said shoulder that is extended comprises a raised surface disposed between an upper and a lower recessed surfaces and said other of said shoulders comprises a no-go shoulder on said stationary component;

said collet clearing said no-go shoulder when positioned in said recessed surfaces.

9. (Original) The mechanism of claim **8**, wherein:

said collet, when on said raised surface, engaging said no-go shoulder to impede movement of said movable component.

10. (Original) The mechanism of claim **9**, wherein:

said raised and recessed surfaces are disposed on a sleeve that is mounted for relative movement with respect to said movable component.

11. (Original) The mechanism of claim **10**, wherein:

said sleeve comprising a second no-go shoulder to selectively engage said no-go shoulder on said stationary component to alter the position of said collet with respect to said sleeve when said predetermined movement is made.

12. (Original) The mechanism of claim **11**, wherein:

said predetermined movement comprises opposed movements of said movable component comprising a first movement where said no-go on said sleeve engages said no-go on said stationary component, while said movable component continues to move, to shift said collet to said lower recessed surface and a second movement of said movable component opposite to said first movement where said collet passes said no-go on said stationary component and ends up on said raised surface.

13. (Original) The mechanism of claim **12**, wherein:

said sleeve is urged to move during said second movement of said movable component until movement of said sleeve is stopped by said stationary component to allow said collets to move relatively to said sleeve and wind up on said raised surface.

14. (Original) The mechanism of claim **13**, wherein:

said collet is selectively repositioned from a locked position on said raised surface to an unlocked position on a recessed surface as said final controlled element is urged into another of said two positions.

15. (Original) The mechanism of claim **5**, wherein:

said lock assembly can be released by relative movement between itself and the shoulder that it had extended as a result of a part of said movable component being released to operate said final controlled element into another of its said two positions.

16. (Currently amended) A lock assembly for a downhole valve, comprising:

a stationary housing;

a mandrel movably mounted with respect to said housing and connected to a valve member to selectively open and close said valve member in response to a predetermined movement of said mandrel;

a lock that automatically engages said mandrel when said valve member reaches one of said open and closed positions, said lock not defeated by a force or a pattern of forces applied to it when set, said valve member selectively movable to the other of said open and closed positions with a first portion of said mandrel after said first portion is released from a second portion for relative movement therebetween ~~with said lock still engaged~~.

17. (Original) The assembly of claim **16**, wherein:

said lock selectively retains said mandrel to said stationary housing.

18. (Previously amended) A lock assembly for a downhole valve, comprising:

a stationary housing;

a mandrel movably mounted with respect to said housing and connected to a valve member to selectively open and close said valve member in response to a predetermined movement of said mandrel;

a lock that automatically engages said mandrel when said valve member reaches one of said open and closed positions, said lock selectively defeated to allow movement of said valve member to the other of said open and closed positions;

said lock selectively retains said mandrel to said stationary housing;

said lock comprises a collet connected to said mandrel and a sleeve movably mounted over said mandrel and further comprising a raised surface;

said housing comprising an internal no-go shoulder;

said lock operative to retain said mandrel to said internal no-go shoulder of said housing when said collet aligns with said raised surface on said sleeve.

19. (Original) The assembly of claim **18**, wherein:

said sleeve comprises at least one recessed surface, said collet clearing past said internal no-go shoulder when aligned with said recessed surface.

20. (Original) The assembly of claim **19**, wherein:

said at least one recessed surface on said sleeve comprises an upper and lower recessed surfaces respectively above and below said raised surface;

said sleeve further comprises a second no-go shoulder such that movement of said mandrel with said no go shoulders in contact moves said collet from said upper to said lower recessed surface, whereupon reversal of mandrel movement direction said collet clears said internal no-go shoulder and said sleeve movement is stopped allowing said collet to ride up to said raised surface to lock said mandrel to said housing.